UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,178	03/30/2006	Atsushi Horihata	7176.3019.001	4054

23399 7590 04/03/2008

REISING, ETHINGTON, BARNES, KISSELLE, P.C.
P O BOX 4390
TROY, MI 48099-4390

EXAMINER	
GRAY, JILL M	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
04/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,178	HORIHATA ET AL.	
	Examiner	Art Unit	
	Jill Gray	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/30/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, in claim 2 the language of "at least one compound from" is not proper Markush language. The suggested language is "at least one compound selected from the group consisting of."

3. Regarding claim 2, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 4 depends upon the limitations set forth in claim 2, and thus is indefinite for the reasons stated above.

Therefore, the metes and bounds for which patent protection has been sought are not clear.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoki et al., 4,427,816 (Aoki).

Aoki discloses vinyl chloride resin that can be formed into filaments, said resin comprising 100 parts by weight of vinyl chloride, .01 to about 10 parts by weight of an epoxy compound such as epoxidized fish oil, about .01 to about 3 parts by weight of a nitrogen-containing polyol, such as tris(2-hydroxyethyl)isocyanurate, and about .5 parts by weight of hydrotalcite, as required by present claims 1-2 and 4. See entire document, and for example, abstract, column 9, line 39 through column 10 and line 18, column 21, lines 32-50 and Examples.

Therefore, the teachings of Aoki anticipate the invention as claimed in present claims 1-2 and 4.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being obvious over US 2006/0141248 A1 Sakurai et al., (Sakurai) in view of Aoki et al., 4,427,816 (Aoki), as applied above to claims 1-2 and 4.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the

application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Sakurai teaches a vinyl chloride fiber containing 100 parts by weight of vinyl chloride resin, 0.1 to 10 parts of stabilizer that can be hydrotalcite, and an epoxy compound, per claim 1. In addition, Sakurai teaches that his vinyl chloride fiber is produced by a method comprising melt-spinning at a temperature of 175°C, stretching in air at 105°C and relaxing the fibers in an air atmosphere of 110°C, as required by present claims 1 and 5-6. See entire document.

Sakurai does not teach the specific epoxy compound or the inclusion of a nitrogen-containing polyol.

Aoki teaches that known stabilizers and plasticizers for vinyl chloride polymers include hydrotalcite and epoxy compounds of the type contemplated by applicants in claim 2, such as epoxidized soybean oil, and nitrogen-containing polyol, such as tris(2-hydroxyethyl)isocyanurate. See column 9, line 39 through column 10 and line 18 and column 21, lines 32-50.

Regarding claims 2 and 4, it would have been obvious to one having ordinary skill in the art to include an epoxy plasticizer as taught Aoki, and further including any of those plasticizers known to the art, such as epoxidized soybean oil, and to further include a nitrogen-containing polyol also as taught by Aoki, with the reasonable expectation of achieving the predictable results associated therewith.

Therefore, the combined teachings of Sakurai and Aoki would have rendered obvious the invention as claimed in present claims 1-2 and 4-6.

10. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al., 6,312,804 B1 and 6,465,099 B1 (referred to collectively as Yamane and all references will be based upon '804) in view of Aoki et al., 4,427,816 (Aoki) as applied above to claims 1-2 and 4.

Yamane teaches vinyl chloride fibers containing 100% by weight of vinyl chloride resin, 0.2 to 5.0% by weight of thermal stabilizer such as hydrotalcite, and a plasticizer that can be an epoxy compound, as required by present claim 1. In addition, Yamane teaches a method of producing said fiber comprising melt-spinning, stretching and relaxing said fiber at temperatures within the instant claimed ranges as set forth in claims 5 and 6. See entire document, and for example, abstract, column 7, lines 20-25, and columns 9 and 10.

Yamane does not teach the specific epoxy compound or the inclusion of a nitrogen containing polyol.

Aoki teaches that known stabilizers and plasticizers for vinyl chloride polymers include hydrotalcite and epoxy compounds of the type contemplated by applicants in claim 2, such as epoxidized soybean oil, and nitrogen-containing polyol, such as tris(2-hydroxyethyl)isocyanurate. See column 9, line 39 through column 10 and line 18 and column 21, lines 32-50.

Regarding claims 2 and 4, it would have been obvious to one having ordinary skill in the art to use as the epoxy plasticizer taught Yamane any of those plasticizers

known to the art, such as epoxidized soybean oil, and to further include a nitrogen-containing polyol as taught by Aoki, with the reasonable expectation of achieving the predictable results associated therewith.

Therefore, the combined teachings of Yamane and Aoki would have rendered obvious the invention as claimed in present claims 1-2 and 5-6.

No claims are allowed.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jill Gray
Primary Examiner
Art Unit 1794

/Jill Gray/
Primary Examiner, Art Unit 1794